By inspecting Figure 7 it is seen that Oku may receive a digital broadcast via 1-5 (col. 5, l. 1 – col. 6, l. 22), or an NTSC analog broadcast via 30-33 (col. 9, l.58- col. 10, l. 5). The NTSC broadcast is digitized by 33 (Fig. 8) and reformatted by reformatter by 14 (col. 10, l. 8) such that both the NTSC and the digital broadcast share a common format and either may be selected for display (col. 8, l. 9-16). Display is accomplished by converting the selected signal back to analog with DAC 16 and displaying the analog signal on a monitor 18.

In Oku Fig. 1 it is seen that the analog signal is the output of DAC 16. The signal input to DAC 16 is the digital video signal and the DAC converts it to an analog video signal. Similarly, in Oku's other Figures the analog signals are created by DACs which convert the digital video to analog video. These analog signals are standard analog signals, not the compatible analog signal of the instant claims which may carry digital video signal. In Oku the digital video is converted to analog video by the DAC 16. Simply stated the voltage of the active video portion of the video signal output from DAC 16 corresponds to the brightness of the image conveyed by that video signal.

By contrast, in the preferred embodiment of the present invention, the digital bits of the digital video are carried in a multilevel pulse amplitude modulated form in the active video portion of a compatible analog video signal. For example see the present disclosure Figure 6 which shows how 3 bit bytes (601) are carried as analog levels corresponding to the byte values (000-111). The signal of Figure 6 is a compatible analog signal, the video it carries (600) is still digital video carried in a pulse amplitude modulated form. While the pulse amplitude modulated form of the video is created with a Digital to Analog Formatter, it is not converted to an analog video signal in the traditional

sense of the operation of a digital to analog converter. If one were to view the compatible analog video signal on a monitor, the multilevel waveform corresponding to the digital bits would appear as noise.

More simply stated, the voltage of the active video portion of the signal (600) of Figure 6 corresponds to a binary number, and is different from Oku where the voltage of the active video portion of the signal corresponds to brightness of the image.

The above described distinctions are reflected in the claim language. For example claim 1 calls for "creating a compatible analog signal which may carry a digital video signal on an existing analog video system." The compatible analog signal of the preferred embodiment is shown in Figure 6 as described above. Claim 1 also calls for "a digital to analog formatter step ... providing said compatible analog signal." For example the digital to analog formatter step is described with respect to Figure 1 and provides the compatible analog signal as described above. The other claims contain similar features and language. In Oku there are only digital to analog converters which provide an analog version of the digital signal.

The compatible analog signal is described at the top of page 12 "[t]he compatible analog signal 8a is preferred to appear as a standard analog video signal, in as much as the makeup of the compatible analog signal 8a is desired to utilize standard analog sync and burst while it is also preferred to convert the digital signals 5a, 6a into a multilevel analog waveform and placed into the active video portion of a standard analog signal format in a fashion such that the digital signals 5a, 6a are passed and operated on by standard analog signal equipment without imparting adverse distortion, artifacts and the like to the waveform, thus allowing subsequent recovery of digital signals 5a, 6a as will

be described further below." Note in particular the wording "digital signals 5a, 6a are passed and operated on by standard analog signal equipment." In Oku the digital signal is converted to analog, rather than being passed by the analog equipment.

In view of the above explanation of the patentable differences between Oku and the instant claims, reconsideration of the examiner's rejection under 35 U.S.C. 102(e) is respectfully requested. In that the application is believed in form for examination, further action in that respect is respectfully solicited.

Respectfully Submitted,

J. Carl Cooper
Reg. 34,568
(775) 831-6123

I hereby certify that this correspondence is being facsimile transmitted to the U.S. Patent and Trademark Office, Fax No. (703) 872-9306 on September 14, 2004.

VERSION WITH MARKING TO SHOW CHANGES MADE

Fig. 3 shows an alternate encoder embodiment of the invention. A digital video signal **1a** is received and coupled to a video compression circuitry **3** where it is

compressed to provide a compressed video signal **5a**. Optionally, a multiple channel digital audio signal **2a** associated with the HDTV video signal **1a** is received and coupled to an audio compression circuitry **4** to provide a compressed audio signal **6a**. The video compression circuitry **3** and the audio compression circuitry **4** being the same as described with respect to Figure 1. The compressed video signal **5a** and, if utilized, the compressed audio signal **6a** are coupled to a digital combiner **12** which operates to provide a digital combined compressed audio and video signal **13** which is coupled to digital to analog formatter **7**, corresponding in function to the digital to analog formatter **7** of Fig. 1. In this fashion the combined compressed digital signal **13** is converted to a suitable analog waveform and combined with standard sync and blanking waveforms to provide compatible analog signal **8a**. It may be noted that while the preferred embodiment of the invention utilizes a single compatible analog signal **8a**, there may be applications for the invention where multiple signals would be desirable. As one example, rather than the compatible analog signal **8a** being compatible with NTSC standards, it may be desired to have three signals compatible with RGB signal standards or some other multiple signal standard. As another example, separate video and audio compatible analog signals may be utilized. The use of such multiple signals will be within the capability of one of ordinary skill in the art from the teachings herein. It is intended to be understood that while the phrase compatible analog signal is singular, it is to be construed as encompassing such multiple signal embodiments, both in the description of the invention given in respect to the various figures, and the invention as claimed.

ABSTRACT

The invention ~~provides for converting~~ converts a digital HDTV or SDTV video and/or audio signal(s) into an ~~compatible~~ analog signal which is compatible with existing analog systems~~, especially those of NTSC, PAL or SECAM types~~. The compatible analog signal carries the digital video and/or audio in a quasi digital form which provides immunity to analog noise and distortion. Digital video and audio are compressed to provide ~~a~~ digital compressed ~~signal. The compressed video and audio~~ signals that are coupled to a digital to analog formatter where they are formatted into an NTSC, PAL, or SECAM compatible analog signal. ~~The NTSC, PAL, or SECAM compatible analog signal has standard blanking interval with standard sync and burst.~~ The active video portion of the signal uses a multilevel pulse amplitude coded signal to carry the digital compressed signal. The converted analog signal can then be stored or transmitted using existing NTSC, PAL, or SECAM standards and equipment ~~for storage or transmission~~. ~~Media. The present invention also provides for converting the specially formatted NTSC, PAL or SECAM analog signal back to a digital HDTV or SDTV video and or analog signal such that conventional NTSC, PAL or SECAM analog video storage and transmission equipment can be used to store or transmit the digital video and audio signal with little or no loss in signal quality.~~